WHAT IS CLAIMED IS:

1. An angle detecting apparatus comprising: a range finding unit for determining a distance to an object in each of three or more mutually different directions; and an inclination angle calculating unit for calculating two or more inclination angles of the object relative to a reference line based on three or more range finding results obtained by the range finding unit and determining one inclination angle based on the two or more calculated inclination angles, to thereby reduce inaccuracy in the one inclination angle caused by an error in one of the two or more calculated inclination angles.

2. An angle detecting apparatus according to claim 1; wherein the range finding unit comprises a line type passive range finder having a pair of lenses spaced from each other by a baseline length, line sensors on which a pair of images of the object are focused by the pair of lenses, and a calculating unit for calculating the distance to the object based on outputs of the line sensors in each of a plurality of different directions; and wherein the reference line is in the direction of the baseline length.

3. An angle detecting apparatus according to claim 2; wherein the object is a viewing screen on which an image is projected and the one inclination angle comprises an inclination angle of the viewing screen relative to a projecting device which projects the image.

4. An angle detecting apparatus according to claim 1; wherein the inclination angle calculating unit calculates the average value of the two or more inclination angles to determine the one inclination angle.

5. An angle detecting apparatus according to claim 4; wherein the range finding unit comprises a line type passive range finder having a pair of lenses spaced from each other by a baseline length, line sensors on which a pair of images of the object are focused by the pair of lenses, and a calculating unit for calculating the distance to the object based on outputs of the line sensors in each of a plurality of different directions; and wherein the reference line is in the direction of the baseline length.

6. An angle detecting apparatus according to claim 1; wherein the three or more mutually different directions comprises at least four mutually different directions, and the inclination angle calculating unit calculates three or more inclination angles of the object relative to the reference line based on at least four range finding results obtained by the range finding unit and determines the one inclination angle based on inclination angles remaining after removing maximum and minimum angles from the three or more calculated inclination angles.

7. An angle detecting apparatus according to claim 6; wherein the range finding unit comprises a line type passive

range finder having a pair of lenses spaced from each other by a baseline length, line sensors on which a pair of images of the object are focused by the pair of lenses, and a calculating unit for calculating the distance to the object based on outputs of the line sensors in each of a plurality of different directions; and wherein the reference line is in the direction of the baseline length.

8. An angle detecting apparatus according to claim 6; wherein the inclination angle calculating unit determines the average value of the remaining inclination angles as the one inclination angle.

9. An angle detecting apparatus according to claim 1; wherein the inclination angle calculating unit calculates a first inclination angle of the object relative to the reference line based on range finding results of the range finding unit for those of the three or more mutually different directions that are on one side of an axis extending from the angle detecting apparatus to the object, calculates a second inclination angle of the object relative to the reference line based on range finding results obtained by the range finding unit in those of the three or more mutually different directions that are on another side of the axis, and determines the one inclination angle based on the first and second calculated inclination angles.

10. An angle detecting apparatus according to claim 9; wherein the range finding unit comprises a line type passive range finder having a pair of lenses spaced from each other by a baseline length, line sensors on which a pair of images of the object are focused by the pair of lenses, and a calculating unit for calculating the distance to the object based on outputs of the line sensors in each of a plurality of different directions; and wherein the reference line is in the direction of the baseline length.

11. An angle detecting apparatus according to claim 1; wherein the object is a viewing screen or wall on which images are projected.

12. A projector for projecting an image generated according to an input image signal onto a viewing screen comprising: the inclination angle detecting apparatus according to claim 1; and an image distortion correcting unit for correcting distortion in the image projected onto the viewing screen based on an inclination angle calculated by the inclination angle detecting apparatus.

13. An angle detecting apparatus comprising: a line type passive range finder for determining a distance to an object in each of three or more mutually different directions and comprising a pair of lenses spaced from each other by a baseline length, line sensors on which a pair of images of the object are

focused by the pair of lenses, and a calculating unit for calculating a distance to the object based on outputs of the line sensors in each of three or more mutually different directions; and an inclination angle calculating unit for calculating two or more inclination angles of the object relative to the baseline direction based on three or more range finding results of the line type passive range finder.

14. A projector for projecting an image generated according to an input image signal onto a viewing screen comprising: the inclination angle detecting apparatus according to claim 13; and an image distortion correcting unit for correcting distortion in the image projected onto the viewing screen based on an inclination angle calculated by the inclination angle detecting apparatus.